DOCUMENT RESUME

ED 172 485 EC 114 878

AUTHOR	Kullberg, Kjell; Lindstrom, Jan-Ingvar
TITLE	Rehabilitation of the Visually Impaired in the Soviet Union. Report from a Study Tour to Moscow in 1977.
PUB DATE	77
NOTE	34p.; Photographs and parts of text may not reproduce clearly
AVAILABLE FROM	Swedish Institute for the Handicapped, Fack, S-161 25 Bromma, Sweden (10.50 kroner)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Educational Programs; *Foreign Countries; Low Vision Aids; Medical Treatment; *Rehabilitation Centers; Technology; *Visually Handicapped
IDENTIFIERS	Sweden; *USSR

ABSTRACT

The document reports on a 10-day tour to study rehabilitation facilities for the visually handicapped in the Soviet Union. Briefly described are the programs of the following institutions that were visited: Helmholtz Institute of Opthalmology, Specialized School Number 5 for Partially Sighted Children, Scientific Research Institute of Defectology, and the All Russian Society for the Blind. Experiences are considered in terms of the blindness system, low vision aids, medical rehabilitation, and research and development on technical aids and job situations. Differences and similarities between the Soviet Union and Sweden are mentioned. (SBH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED172485

7/1977

REHABILITATION OF THE VISUALLY IMPAIRED IN THE SOVIET UNION
REPORT FROM A STUDY TOUR TO MOSCOW IN 1977

Författare: Kjell Kullberg och Jan-Ingvar Lindström

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

BEST COPY AVAILABLE

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Kjell Kullberg

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

EC 114878

C O N T E N T S

Chapter	Headline	Page
	BACKGROUND	1
1	INSTITUTIONS VISITED	1
1.1	Helmholtz Institute of Ophthalmology	1
1.2	Specialized school No 5 for partially sighted children	4
1.3	Scientific Research Institute of Defectology	6
1.4	All Russian Society for the Blind	7
2	EXPERIENCES AND DISCUSSIONS	11
2.1	The Blindness system	11
2.2	The educational system	13
2.3	Low vision service	14
2.4	Medical rehabilitation	17
2.5	Research and development on technical aids, job situations etc	17
3	DISCUSSION	19
4	SAMMANFATTNING OCH DISKUSSION	23
5	FIGURES	27

BACKGROUND

A ten days' study tour was arranged in accordance with a scientific exchange programme between the Academy of Medical Sciences in the Soviet Union and the Royal Swedish Academy of Sciences. The intention was to study rehabilitation facilities for the visually handicapped in the Soviet Union. Our programme was arranged by the Academy in Moscow. For various reasons it was impossible for us to visit all the institutions we had suggested in our application to the Academies.

The first part of this report will describe in brief the facts we learnt at the institutions we visited. The last part consists of a discussion about our experiences, from different aspects, of the rehabilitation of visually impaired people in the Soviet Union.

1 INSTITUTIONS VISITED

1.1 Helmholtz Institute of Ophthalmology

Address Sadovaya Chernogriasskaya 14/19
Moscow, B-64
Director Dr Ksenia Troutneva

The Helmholtz Institute is an institute for clinical research, development of methods and equipment for diagnosis and therapy and education of personnel for ophthalmological clinics including eye doctors, opticians and engineers. At the institute patients from all Soviet republics are treated. The institute is specialized in lens implantations, treatment of glucoma, retinal diseases and children with eye defects.

The contact lens clinic has had twenty years experience of prescribing contact lenses. Contact lens clinics are being established in several places and today there are about 30 in the Soviet Union. The most common indications are aphakia, myopia, keratoconus, grave astigmatism and anisometri. Apart from these indications lenses are used for therapy and in some cases by sportsmen for normal refractive correction.

The clinic seemed to have good communication with the contact lens and optic industry in Europe and the USA. Some equipment at the clinic had been imported, for example a laser refractometer (Dioptron), but a lot had also been constructed at the clinic.

At the clinic they had developed contact lenses made from a combination of hard and soft lens material. The combined soft-hard lens is supposed to have the advantages but not the drawbacks of both hard and soft lenses. Patents for the method of manufacturing have been applied for in fourteen countries.

They had made some experiments with Galilean telescopes consisting of a contact lens and a lens fitted in a spectacle frame. The magnification used varied from 1.5 to 3 times. They claimed it was too early to tell if the system was practically useful.

The clinic for retinal pathology has had six years experience of treating retinitis pigmentosa with a new method. By giving the patient intramuscular injections of a nuclein acid the degeneration of the retina could in some cases be delayed. The treatment needs three weeks care at the clinic each year. They did not believe in occluding the eyes to delay the retinal degeneration which has been suggested by some scientists.

The clinic for prescribing optical aids dealt with more complicated cases of low vision. Telescopes fitted in frames seemed to be in more common use than high adding lenses in spectacle frames. For higher magnification, e g for reading purposes, hand-held magnifiers were prescribed. Some of them consisted of two or more lenses and had been developed at the Typhlotechnical Laboratory at the University of Sverdlovsk.

The clinic for laser photocoagulation therapy had modern equipment manufactured in the USA. Apart from using photocoagulation for treatment of detachment of the retina, laser photocoagulation was used in some cases of toxoplasmosis, tumors, keratitis and choroidal dystrophy.

The clinic of electrophysiology was studying phosphenes generated by stimulation of the eye. These experiments were made in order to try and get new methods for diagnosis. Great interest was also shown in the work of Dr Brindley in the UK and Dr Dobelle in the USA who also are studying phosphenes for other purposes (transmission of information).

The children's department was heavily involved in prevention of eye defects caused by trauma by taking part in a massive information campaign against anything hazardous to the eye.

The importance of early diagnosis was stressed. The first eye examination of the child is made immediately after birth. Hydrophthalmia is treated by surgery at the age of 1.5 - 2 months and was said to have saved sight in several cases. Congenital cataract is also treated very early, i e below the age of twelve months.

New methods for treatment of retinoblastoma were being studied. A combined treatment with X-rays, laser photocoagulation and chemotherapy seemed to improve the prognosis considerably.

Studies were being made on aberrations of the optical system of the myopic eye with the aim of being able to prescribe better optical aids.

Progressive myopia was in some serious cases treated by reinforcing sclera with strips of cadaver sclera, a method which has given good results in some cases. Training of accomodation was said to be of value for decreasing the rate of the progression.

The clinic was developing equipment for diagnosis and treatment of low vision. They showed us the "ergograph" which is an instrument for measuring and training of accomodation ability.

Amblyopia is treated by directing a beam of light at the macula. The treatment can obviously last for several years. Several apparatuses for training binocular vision, some of them working with polarized light, were demonstrated.

The study of interaction between nystagmus and accomodation abnormalities had been started recently.

The clinic of microsurgery was mainly dealing with traumas, cornea surgery, vitrectomy and lens implants.The types of lens implants used were demonstrated.

1.2 Specialized school No 5 for partially sighted children

Address 2nd Selskochozjastvenuy pr 2/11
Moscow

Director A Backatanova

This school is a boarding school with 24 classes and a total of about 250 pupils. The number of pupils in each class is about one third of the number in an ordinary school. They had three classes with very few pupils who were considered to be mentally retarded in addition to visually impaired. The medical staff at the school consisted of one children's doctor, one ophthalmologist and one nurse. Every child was examined and given a special schedule for how long they should use their eyes for reading, what type of physical exercise each child should participate in, and so on. Many children had regular vision training to improve vision in case of, for example, amblyopia.

Individual technical aids, i e optical aids, were not used very much. The reason for this seemed to be that most of the children had comparably good sight. We saw children in the upper grades coping with mathematical tables in the usual (i e very tiny) print.

Some educational aids were used. Maps in bright colours and good contrast were made by the teachers. In geometry, polystyrene was used for making models of cones, cylinders and so on together with kits of metal bars for the construction of tetraeders etc. Rubber stamps were used instead of drawing mathematical symbols and geometric figures.

Standard audiovisual aids were film projectors, tape recorders and over-head projectors. Colour-TV sets for broadcasted programmes were standard equipment in rooms used for biology and physics.

The lighting in the different rooms seemed to be rather good, at least in quantity. Flouroscent tubes were used extensively. Specially adapted desks were not used. They had tried desks specially developed for partially sighted children but the

result had not been satisfactory. Obviously the mechanical design and quality had not been good enough.

The education was alternated with practical work, and the school had a production facility of its own (plastic moulding in a workshop). The articles produced were delivered to the ordering factory and the income was used for special purposes like financing travels, excursions, etc.

1.3 Scientific Research Institute of Defectology

Address Pogodinskaja ul 8
Moscow

Director T A Vlasova

Meeting also with Prof Zemtsova, Dr Kaplan, Dr Marejeva.

The institute had a central role in the rehabilitation process of handicapped children. It employed teachers, psychologists, physiologists, physicians, engineers and was studying problems connected with instruction, education and occupational training of children with deafness and defective hearing, blindness and defective vision, mental retardation, speech disorders, motor disturbances and combined effects. The institute was working in three areas:

- scientific research
- recommendations for education and training
- development of technical aids for education

The influence of different levels of illuminations on visibility had been studied which lead up to a recommendation of an illumination of 1 000 - 1 500 lux. This level was claimed to improve greatly visibility, decrease visual fatigue and increase working capacity.

Colour vision among the partially sighted was being studied thoroughly. Special test methods were used to study the colour perception since ordinary tests could not be used for people with a visual acuity less than 0.1.

On initiative of the Institute a communication system for use in the education of deaf-blind people had been developed. The system, called Teletactor, made communication between a sighted teacher and several deaf-blind students possible. The unit for the deaf-blind students consisted of a braille keyboard and a tactile braille display and the unit for the sighted teacher consisted of a normal (Cyrillic) keyboard and a visual alphabetical display. This system was used by four deaf-blind students who were going to graduate from the University of Moscow during 1977.

At the institute there had also been developed an attachment to the telephone based on Morse code which made it possible for deaf-blind people to communicate. None of this equipment was demonstrated but some photos of the Teletactor system were shown. One surprising fact stated was that almost every congenitally deaf person in the USSR has an intelligible spoken language.

1.4 All Russian Society for the Blind

Address 14, Novaya Pl
Moscow Centre

Vice President Ousman A Khafisov

Our programme included a meeting with Mr Khafisov, a visit to a Training Production Centre (TPC) and the House of Culture and a discussion with Mr Ussik, head of the research and development department.

Our discussions with mr Khafisov gave us an insight into the structure of the All Russian Society of the Blind. The main task of the organisation seemed to be providing job opportunities for blind people. The society was running 208 training-production centres offering vocational rehabilitation and employment to blind people. These centres were mostly working as subcontractors to other industries, for example manufacturing components for cars, TV-sets etc. The centres also provided housing and recreation activities to the employees of which at least 50 % were visually handicapped.

A special project concerned finding appropriate job opportunities for blind people and an effort to categorize blind people with regard to their specific demands was made. The aim of this work was not to tell which kind of work was suitable for one category or another, but rather to specify the conditions for suitable working situations. For example one category might have specific demands for good illumination, low noise level, no physical overstrain etc.

The visit to the training-production centre showed blind people working in assembly lines. To us the work seemed very monotonous and did not offer much change, although job rotation was applied. No visually handicapped person seemed to have any supervising task or be involved in quality checks etc. On the other hand the production rate and quality seemed to be high. Special adaptations had been made to facilitate and make the operations safe for the blind. No special measures were taken for making the buildings better adapted to mobility handicapped people, except that rubber carpets had been placed on one side of the corridors to give tactile information. These carpets also indicated that no obstructions were to be placed in that part of the corrdior.

The House of Culture contained - among other things - various exhibitions. One showed products manufactured by training-production centres belonging to the society. Another displayed technical aids for visually handicapped people.

The exhibition of aids contained one part with aids used at work and consisted mostly of different kinds of jigs for drilling, wiring, assembly work etc. The exhibition of aids for daily living had almost the same selection of household articles that are used in Sweden.

Much effort had been made in designing educational aids and a lot of models and equipment for teaching geometry, astronomy and physics were shown.

Some rather sophisticated aids in a prototype stage were exhibited. A reading machine for translation of print to an audible code and a closed-circuit TV system with a miniaturized camera and monitor (Figure 1) were among the most interesting things.

Mr Ussik is head of the newly established department for research and development called Typniotechnical Laboratory. This department employed a staff of about 50 people out of which about 20 were designers. The tasks of the department were gathering information, carrying out need analyses, evaluations, coordinating R&D in USSR, and of course carrying out R&D. A folding cane was demonstrated. It seemed very rigid and of good quality but was rather heavy. The cane was not intended to be used for the long cane technique which has not yet been introduced in the USSR. Prototypes of electronic thermometers were also demonstrated. Mr Ussik told us that they were developing a reading machine similar to the Optacon and a unit for tape recorders in order to produce compressed speech. Incidentally, cassette tape recorders for

talking books were going to be introduced in the USSR soon. Equipment for braille printing was also developed. Contracted braille was not used for books which of course makes automatic transcribing easier. Regarding mass production of aids, plans existed to manufature some of them at the TPC's belonging to the Society.

2 EXPERIENCES AND DISCUSSIONS

2.1 The Blindness system

According to statistics available at the All Russian Society of the Blind, there are about 265 000 visually handicapped people in the Soviet Union. Out of these about 204 000 are living in the Russian Federal Republic. This corresponds to roughly 1‰ of the population. The present age distribution is

Age group	Number of persons
0 - 6	272
7 - 15	4 674
16 - 59	108 729
60 - ∞	90 465

The figures mentioned above include people with a visual acuity not better than 0,08 with the best optical correction. In Sweden the total number of visually handicapped persons with an acuity less than 0,1 is about 10 000 which also corresponds to about 1 ‰ of the population. It is remarkable, however, that whereas in the Russian Federal Republic about 60 % of the blind population is below 60 years of age, the corresponding figure in Sweden is about 30 %. One explanation may be that a large number of the population in the age group 16 - 60 years in the Russian Federal Republic are warblinded, a group which is not represented in Sweden at all. A question mark still remains however, about the comparatively small number in the age group above 60.

Visually handicapped people in the Soviet Union are taken care of by organisations of the blind, one in every republic. The biggest one is the All Russian Society of the Blind in the Russian Federal Republic. Rehabilitation is organized, generally speaking, in the same way in all the republics, and so,

what is said below about the All Russian Society is also in principle valid for other republics.

Visually handicapped persons in the Soviet Union are divided into two groups: those with a visual acuity of up to 0.08 and those between 0.08 and 0.3. The first group is considered as blind, the latter as partially sighted. Children belonging to the first group are always to be found in special schools for the blind and are later taken care of by the All Russian Society of the Blind for employment etc. People in the second group are considered as partially sighted and currently not members of, or employed by, the Society of the Blind. Technical aids available for the visually handicapped are in general not free of charge. However, aids like canes and tape recorders could be bought at reduced prices from the All Russian Society of the Blind.

The Government is responsible for the rehabilitation in general of visually handicapped persons. For instance, the education of visually handicapped children is under the auspices of the Department of Education, medical care, of the Department of Health and Welfare, etc. However, as soon as employment and activities for daily living for adults are concerned, the appropriate activities are taken care of by the All Russian Society in conjunction with the Government. So, the All Russian Society is responsible for the supply of aids as well as employment opportunities. The main financial source for running the organisation is the income from the so called Training and Production Centers (TPC). The production at the TPC's is part of the central production plan for the whole country. The products are either delivered directly to shops for public consumption or to factories according to sub-contracts. For instance, the cabling for some Russian cars and wiring of TV-sets are made at TPC. Currently, the 208 TPC's give an annual income of

about 600m Roubles (app 900 m dollars). 35 % is paid in tax to the Government, the rest is used by the Society for investment in TPC's, subsidising the production of aids, administration of the Society etc.

2.2 The educational system

In the Russian Federal Republic all children's eyes are examined by an ophthalmologist during their first year of life. Children with a visual acuity of less than 0.4 are given special training which continues through the years in order to improve their vision At the start of pre-school education those with a visual acuity less than 0.4 are placed in special pre-schools. At the onset of primary school (at the age of 7) those with an acuity less than 0.08 are placed in special schools for the blind, whereas those between 0.08 and 0.3 are placed in special schools for the partially sighted. Children with acuity better than 0.3 are usually allowed to attend ordinary schools.

Thus education is completely segregated, and there seems to be no intention to change this system, which is considered to be both effective from the society's point of view and providing a less stressing environment for the children. Children with normal vision spend 9 years in the fundamental school, whereas those who are visually handicapped spend 12. Ophthalmologists play an important role in the life of visually handicapped children not only as prescribers of medicine and aids but also as "prescribers" of various types of visual training during the whole period of education.

The organisation primarily responsible for all special education for handicapped children is the Institute for Defectology in Moscow. The Institute develops methods of education, teaching material and technical aids. The institute has

its own staff of specialists and seem to have very little contact with teachers or other "field workers".

At our visit to Boarding School No 5 for partially sighted children we first found it surprising that so few technical aids were in use. Simple hand-held magnifiers and increased lighting (in the ceiling) was the only special adaptation to be found. However, the main explanation was probably that most of the children had fairly good vision. No other optical aids seemed to be very frequently used. An exception is a closed circuit TV-system for educational purposes which was said to be in use in school No 2. An improved version of that system was said to be designed for school No 5 and going to be delivered within a year. We were told that at schools for the blind only aids like braillers, slates and embossed material were in use.

Every school for visually handicapped children had one or more full-time employed doctor who, among other things, was responsible for the vision training and regular examination of the children.

After finishing school, the possibilities seem to be very different for blind as opposed to partially sighted children. Pupils from schools for the blind are offered job opportunities at the TPC's, whereas partially sighted children normally try to get a job on the open market, in ordinary factories, for example. We received very different figures on the percentage of blind and partially sighted children who went to higher education. We were told at School No 5 that 50 % of their pupils continued on to higher education.

2.3 Low vision service

Contrary to the situation in Sweden, the low vision service did not seem to be organized in separate units, but physically integrated in the eye clinics and the schools.

Also, in contrast to the situation in Sweden, there seemed to be no lack of ophthalmologists and so the doctors themselves seemed to be involved in all rehabilitation processes. On the other hand, training was quite different compared to what we are striving for in Sweden. Low vision training mainly seemed to incorporate the training of accomodation, eye movement, etc. For this purpose special devices were used, such as sliding illuminated objects which could be moved towards and away from the eye in order to train accomodation, boards with bulbs that could be randomly illuminated for the training of accurate eye movement, and simple drawn pictures that could be traced with a pencil in order to improve eye-hand coordination (Figure 2). We were also shown a lot of familiar diagnostic instruments, manufactured abroad as well as in the USSR.

A striking difference between Sweden and the Soviet Union was the sight-saving method used in the rehabilitation of partially sighted persons in the Soviet Union, especially children. The generally held opinion in the Soviet Union was that the eyes could become damaged by using them too much, and therefore the ophthalmologists prescription included the kind and maximum time of vision work that was allowed for each child. We discussed this matter very extensively with Dr Kaplan at the Institute of Defectology, but regrettably we did not get the scientific evidence for this opinion.

The optical aids in use were in general of the same kind as are used in Sweden although the variety was much more restricted. The most frequently used aid in the school for partially sighted children seemed to be hand-held magnifiers. We were also shown some magnifiers of special design made of plastic material at the laboratory in Sverdlovsk as well as some telescopic systems with magnifications from 2 - 20 X.

As mentioned before, all prescriptions are made by ophthalmologists who are working at a hospital. Consequently, there are no opticians dispensing spectacles to the public. After inspection, the patient takes his prescription to a special shop, served by opticians. In cases where the spectacles are of a "common" type, they can normally be delivered at once, whereas in "special" cases the patient must wait one or a few weeks. This service was based upon a standard assortment of frames, where only small adjustments had to be done. We had the opportunity to look at the assortment in such an optician's shop and found perhaps ten different types of frames, all in various sizes. The quality and finish was perhaps not up to the standard we are accustomed to in Sweden, but then nor were the prices! A pair of spectacles - including the lenses - for children cost about 3 Roubles(about 20 SwCr) and for adults 3 - 6 Roubles(about 20 - 40 Sw Cr). We tried to find out if the prices were subsidized, but we were told that they were manufactured under the same circumstances as all other goods for consumption in the Soviet Union. - A pair of telescopic lenses cost 35 - 40 Roubles(app 200 - 250 Sw Cr).

At the Helmholtz Eye Hospital we were shown a magnifier on a stand and a special device for reading overhead transparances but we did not see them in use anywhere. We had discussions with people at the Institute of Defectology and School No 5 about other aids for the partially sighted, mainly lighting armatures and working tables. Very little seemed to have been done, except for installing batteries of flourescent tubes in the ceiling and asymmetric black-board lighting armatures at School No 5. The reason for the relative lack of equipment may be found in the composition of the rehabilitation team with no experts in technical or ergonomical questions, and the fact that children with very little residual vision are trained as blind at schools for the blind.

Closed circuit TV-systems are also very rare, but some development is going on. A system was said to be in use in school No 2 and a new one was being designed for school No 5. The new system was said to be based on experiences from the first one, and designed so that the pupil could use his system conveniently without disturbing the view for others. The new system was being designed by the Laboratory of Medical Instruments and was initiated by the Institute of Defectology.

2.4 Medical rehabilitation

Within the field of medical rehabilitation two areas were given special emphasis, namely the treatment of Retinitis Pigmentosa and coagulation with laser therapy.

They had gained a lot of experiences from treatment of Retinitis Pigmentosa, and had come to the conclusion that occluding one eye as a sight-saving therapy has no effect. Now a therapy based on the injection of nuclein acids was being tried out and reported to be initially encouraging.

Laser therapy seemed to be extensively used for treatment of retinal detachment, diabetes retionpati, choroidal dystrophy, retinal tumors and keratitis. The Institute utilises one argon laser and one krypton laser for this purpose. This application was said to be trouble free and with no observed secondary effects.

2.5 Research and development on technical aids, job situations etc

Research and development in the field of aids for the visually handicapped seemed to be initiated and run by two organisations: where educational aids are concerned the Institute of Defectology has the main responsibility, and when ADL aids and vocational aids are concerned the All Russian Society for the Blind is responsible.

The Institute of Defectology has initiated development work on CCTV for use in school and communication systems for deaf-blind people, whereas very little attention seems to have been paid to optical aids, lighting conditions and ergonomical questions.

The All Russian Society for the Blind has a long tradition within the field of research and development of vocational aids and currently an interesting collection of versatile tools and devices are used by blind workers (Figures 3 and 4) Examples are matrices for mounting components on printed cards, jigs for drilling and punching and automatic screwdrivers, etc for quick assembling of small mechanical units. In some cases the tools were modified standard devices, in other a completely new aid had been ieveloped for a special purpose. The quality of these devices was high and some of them were demonstrated in normal use.

The All Russian Society for the Blind does not only concern itself with the development of tools, but also with proper job placement, in a wide sense, within the TPC. So, a research project had been initiated a year ago aiming at a better "fitting man to the task". Scientists have classified the visually handicapped population in 8 categories with respect to their diagnosis, and stated the usual limitations connected with each specific diagnosis. Examples are cataract - sensitive to glare, Retinitis Pigmentosa - restricted field of vision, total blindness - ambient noise not accepted, etc. The goal is to describe all job situations in terms relevant to this check list in order to avoid any major mistakes in job placement. They were very anxious to point out that the ambition was <u>not</u> to create special "blind jobs", but to become more aware of the problems that may arise, and see if these could be eliminated or reduced in advance.

A relatively new activity is research and development on ADL aids. A separate unit had been established for that purpose within the All Russian Society one year ago. The unit has about 50 persons employed of which 20 are researchers. Up till now, this unit has produced between ten and twenty prototypes of aids such as folding canes, braille displays, an electronic calculator with braille display, thermometer with acoustical display (Figure 5) and CCTV components (Figure 1). We were shown devices and photos which revealed a standard to be expected from a research facility of the above mentioned size and composition. The question of production had not yet been solved. The group was very anxious to make some market analyses in order to make priority judgements and estimations of numbers etc. As, in general, blind people have to pay for their ADL aids themselves, the problems to be faced were very similar to those in any country with a free market and no state subsideries for aids for the handicapped.

3 DISCUSSION

The main purpose of the study visit was to get an idea of the state of the art in research and development of aids for the visually handicapped, environmental planning and questions related to these, e.g. statistics, training, education and job opportunities, and if possible, establish contacts with research groups and individuals. Due to a very great discrepancy between our suggested plans and those presented upon our arrival in Moscow, only part of these ambitions could be fulfilled. Based on our limited experiences we got the impression that in some areas there are great differences between the Soviet Union and Sweden regarding the aims and methods used in the rehabilitation process as well as accepted scientific concepts. In other fields, however, the two countries seem to have very similar approaches.

Great differences were revealed in the educational and vocational systems in so far as the Soviet system emphasizes efficiency from the society's point of view as well as a milder stress situation for the handicapped individual. This leads to segregation in education as well as the job situation. In a sheltered and adapted environment the individual's ability may increase because of the special adaptations that could be done, and as the handicapped person does not have to compare his own ability to that of the non-handicapped the stress experienced may be reduced. The cost of this is to be considered as "special" and to a large extent spend life within groups of persons with handicap as their common denominator. This has been considered in Sweden to create too many drawbacks for the individual, and so the aim here has been to integrate visually handicapped persons in schools as well as in job situations. The price to pay for this - at least at the initial stage - is adaptation difficulties and stress problems. It is well known that there are great problems in Swedish schools where visually handicapped children are integrated because of the lack of sufficient assistance from special teachers. Furthermore, a large majority of the visually handicapped individuals aged between 16 and 65 are unemployed.

Research and development of technical aids and related questions under the auspices of the All Russian Society for the Blind showed an interesting level of activity. We recommend that a close cooperation, initially as an exchange of information, be carried on between appropriate authorities as well as individual researchers. Cooperation on development of vocational aids as well as the research project on job opportunities and the recently started research and development on ADL-aids is also recommended.

Our possibilities to compare ideas and successes in medical research are limited. However, the "sight-saving therapy"

is a method not adhered to in Sweden. Obviously, there are great differences between the opinion of researchers in the Soviet Union and those in Sweden about the results of a restricted as opposed to unrestricted use of vision, and an open discussion and exchange of research results between the two countries would be beneficial. A problem is that the Soviet ophthalmologists seem to participate rather seldom in international conferences and that their Swedish colleagues only seldom have the opportunity to participate in conferences in the socialist countries.

4 SAMMANFATTNING OCH DISKUSSION

En tio dagars studieresa har företagits till Moskva för att studera resurser och metoder för rehabilitering av synskadade. Resan gjordes som en del i ett program för vetenskapligt utbyte och arrangerades av Medicinska Vetenskapsakademien i Sovjetunionen och Vetenskapsakademien i Sverige. Av olika orsaker fick vi inte tillfälle besöka alla de institutioner vi föreslagit i vår ansökan till akademierna.

De institutioner som besöktes var Helmholtzinstitutet (ögonsjukhus), innefattande kontaktlinskliniken, kliniken för näthinnesjukdomar, kliniken för optiska hjälpmedel, kliniken för laserfotokoagulationsterapi, barnkliniken, och kliniken för mikrokirurgi. Vidare besökte vi skola nr 5 för synsvaga barn, institutet för defektologi, samt All-Ryska Blindförbundet med ett tränings- och produktionscentrum samt kulturhus för synskadade i Moskva.

Det övergripande målet för vår resa var att få en uppfattning om läget avseende såväl forskning och utveckling kring hjälpmedel för synskadade som miljöplanering. Vi ville även informera oss om synskadades villkor för utbildning och arbete.

På grund av en rätt stor avvikelse mellan den av oss föreslagna planen för studiebesök och den som presenterades oss vid ankomsten till Moskva kunde våra planer bara delvis förverkligas.

Baserat på våra sålunda ganska begränsade erfarenheter fick vi intrycket att det inom vissa områden finns stora skillnader i mål och medel både i rehabiliteringsarbetet och i vetenskaplig praxis mellan Sovjetunionen och Sverige. Sådana skillnader avslöjades i utbildningssystemet och arbetslivet på så sätt, att det sovjetiska systemet både understryker samhällets

krav på effektivitet och en avstressad situation för den enskilde handikappade. Detta leder till segregation i utbildning såväl som arbetsmarknad. I en skyddad och tillrättalagd miljö kan man givetvis vänta sig ökade prestationer från den enskilde individen, och när inga prestationsjämförelser kan göras med icke-handikappade medmänniskor är det också rimligt anta att stressen minskar. Priset man får betala är att bli betraktad och behandlad som "annorlunda" och i stor utsträckning tillbringa sitt liv i en grupp där handikappet primärt är enda gemensamma nämnaren. I Sverige har detta system ansetts förenat med alltför många nackdelar och därför har här strävan varit att integrera synskadade i skolor såväl som på arbetsplatser. Priset man får betala för detta, åtminstone i ett initialskede, är anpassningssvårigheter och stressproblem. Det är välkänt att problemen är stora i svenska skolor där synskadade barn integreras, bland annat därför att man saknar de specialutbildade lärare som behövs. Bland de synskadade i Sverige som är i arbetsför ålder, det vill säga mellan 16 och 65 år, är en stor majoritet arbetslös, medan i Sovjetunionen alla som kan arbeta får göra detta.

Forskning och utveckling kring tekniska hjälpmedel och hithörande frågor under All-Ryska Blindförbundets ansvar, visade en intressant aktivitetsnivå. Vi rekommenderar att ett närmare samarbete - till att börja med som informationsutbyte - tas upp mellan såväl institutioner som enskilda forskare i de båda länderna. Ett samarbete rekommenderas kring utveckling av yrkeshjälpmedel, forskning kring arbetsplatsanpassning och utveckling av hjälpmedel för daglig livsföring sådan den bedrivs vid Typhlotekniska laboratoriet inom All-Ryska Blindförbundet.

Våra möjligheter till jämförelse av idéer och framgångar inom medicinsk forskning är begränsade. Klart är emellertid, att idén att "spara ögonen" för att behålla en synrest är över-

given sedan länge i Sverige. Det finns uppenbarligen stora skillnader i åsikter mellan forskare i Sovjetunionen och Sverige vad avser resultatet av begränsad respektive obegränsad användning av synrester, och en öppen diskussion med utbyte av forskningsresultat mellan länderna vore nog av värde. Ett problem är att oftalmologer i Sovjetunionen tycks delta rätt sällan i internationella konferenser och att deras svenska kolleger lika sällan bereds tillfälle delta i socialistländernas konferenser.

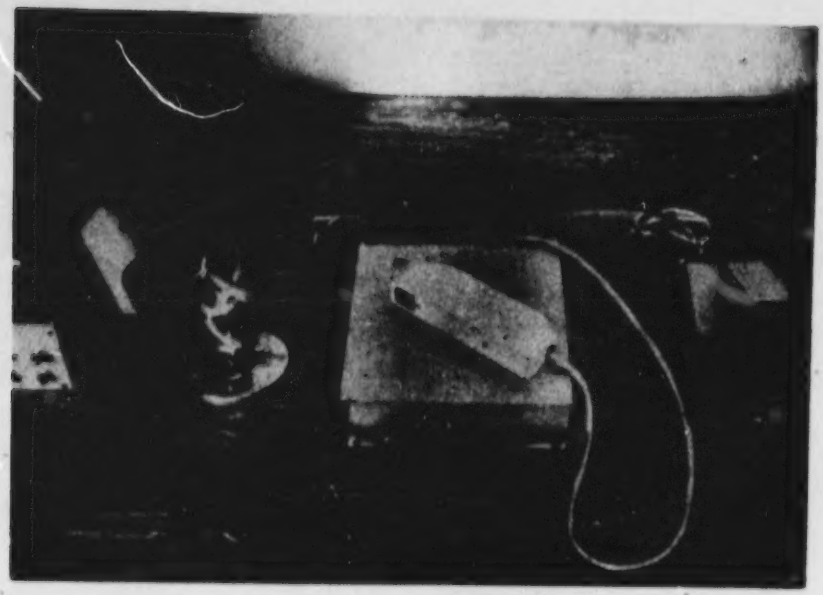

Figure 1 CCTV system for partially sighted. The system consists of a miniatyrized camera to be placed over the text, an electronic unit and (shown to the left) a small display unit.

Figure 2 Device for improving eye-hand coordination.

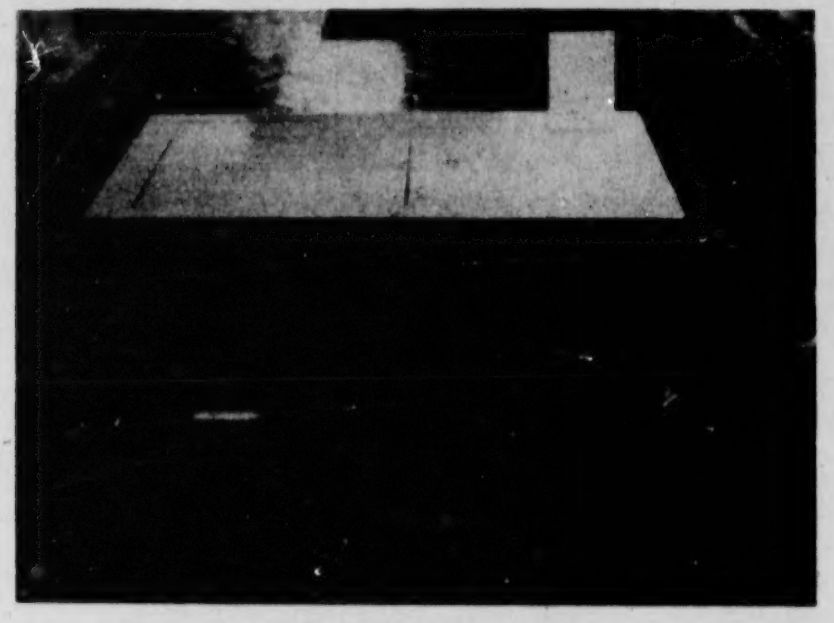

Figure 3 Working table for blind people working at home. The equipment for assembling components is hidden in the table when not in use.

Figure 4 The same working table as in figure 3 ready for work.

Figure 5 Electronic thermometer for blind.

13/1973 Delrapport II över det kliniska arbetet med en- och flerfunktionell handprotes, den s k SVEN-handen

Pris: 4:50 kr exkl moms

1/1974 Se 4/1977

2/1974 Larm- och signalsystem för handikappade. Slut

3/1974 Bröstproteser - sammandrag av en utredningsrapport

Pris: 8:25 kr inkl moms

4/1974 Se 9/1976

5/1974 Simhallar för alla - handikappsynpunkter

Pris: 8:25 kr inkl moms

6/1974 Sammordiska organisationer med verksamhet inom handikappområdet

Pris: 12:25 kr inkl moms

7/1974 Handikapp och bostadskrav

Pris: 14:75 kr inkl moms

8/1974 Report on European Conference on Technical Aids for the Visually Handicapped, March 1974

Pris: 20:- kr inkl moms

9/1974 Verksamhetsplan för handikappinstitutet för budgetåret 1974/75 och åren närmast därefter

10/1974 Vissa åtgärder för patienter med missbildningar i ansiktet

Pris: 6:25 kr inkl moms

11/1974 Verksamheten vid handikappinstitutets synsektor 1973-07-01 -- 1974-06-30

Pris: 7:75 kr inkl moms

1/1975 Se 7/1975

2/1975 Registrering av nordiska projekt inom handikappområdet 1975-01-01

Registration of Nordic Projects Relating to Disability 1975-01-01

Pris: 20:- kr inkl moms

3/1975 Se 9/1976

4/1975 Handikapp och bostadskrav

Pris: 7:50 kr inkl moms

5/1975 Verksamheten 1974-07-01 -- 1975-06-30 inom synhjälpmedelsområdet vid handikappinstitutet

Pris: 8:50 kr inkl moms

6/1975 Telekommunikationer - betydelsefulla instrument för handikappade

Pris: 7:50 kr inkl moms

7/1975 Se 12/1976

I DENNA SERIE HAR TIDIGARE UTKOMMIT

1/1972 Se 1/1974

2/1972 Teknisk undersökning av elektrisk armbåge - USAMBRL
Pris: 3:50 kr exkl moms

3/1972 Provning av handskar till handproteser
Pris: 4:- kr exkl moms

4/1972 Verksamhetsberättelse för handikappinstitutets synsektor 1971-07-01 -- 1972-06-30
Pris: 4:- kr exkl moms

5/1972 Rapport från en studieresa till Jerusalem 12 - 15 november 1972
Pris: 4:- kr exkl moms

1/1973 Handikappinstitutets projektverksamhet. Översikt av pågående projekt 1973-01-01
The Swedish Institute for the Handicapped a summary of current projects
Pris: 3:50 kr exkl moms

2/1973 Nordisk samverkan inom handikappområdet och handikappinstitutets aktuella uppgifter inom denna samverkan. Slut

3/1973 Delrapport över det kliniska arbetet med en- och flerfunktionell handprotes, den s k SVEN-handen. Slut

4/1973 Förargivning av vred på hushållsmaskiner
Pris: 6:50 kr exkl moms

5/1973 Värdering av egenskaper hos stomibandage. Resultat från en enkätundersökning
Evaluation of qualities of ostomy appliances. Results of a questionnaire
Pris: 4:50 kr exkl moms

6/1973 Certain Types of Personal Hoists (2nd edition)
Pris: 4:50 kr exkl moms

7/1973 Se 9/1976

8/1973 Handikapp och telekommunikationer. Föredrag från ISIMA-konferensen
Pris: 12:- kr exkl moms

9/1973 Verksamheten vid handikappinstitutets synsektor 1972-07-01 -- 1973-06-30
Pris: 3:50 kr exkl moms

10/1973 Utredning om behovet av tekniska hjälpmedel för laryngektomerade
Pris: 5:- kr exkl moms

11/1973 Telefon för döva, dövblinda och talskadade
Pris: 4:50 kr exkl moms

12/1973 Registrering av nordiska projekt inom handikappområdet 1973-07-01. Slut
Registration of nordic projects relating to disability. Slut

8/1975 Hur används bostadsanpassningsbidraget? Exempel från Stockholms och Värmlands län

Pris: 8:25 kr inkl moms

1/1976 Bilen och den handikappade. Internationell enkät 1975

Pris: 13:50 kr inkl moms

2/1976 Sortimentsöversikt
- hjälpmedel för av- och påklädning (E2)
- hjälpmedel för intagande av mat och dryck (E5)
- hjälpmedel för vila (E6)

Pris: 16:- kr inkl moms

3/1976 Se 4/1977

4/1976 De handikappade i trafiken - förflyttning med eget fordon

Pris: 25:25 kr inkl moms

5/1976 Rapport från en studieresa till Schweiz 24 mars 1975 och till Tyska Förbundsrepubliken, Holland och England 15 - 30 april 1975

Pris: 10:75 kr inkl moms

6/1976 Undersökning av handikappades funktionskrav på tvättställsblandare

Pris: 17:50 kr inkl moms

7/1976 Rehabilitation in Sweden

Pris: 6:25 kr inkl moms

8/1976 Försöksverksamhet med bokstavstelefoner för döva och talskadade i storstockholmsområdet

Pris: 17:25 kr inkl moms

9/1976 Landstingens hjälpmedelsorganisation. Ersätter nr 7/1973, nr 4/1974, nr 3/1975

Pris: 20:50 kr inkl moms

10/1976 Utredning kring telekommunikationer för döva, dövblinda och talskadade i Norden

Pris: 24:75 kr inkl moms

11/1976 Förstudier och utvecklingsarbete kring rullstolar för förståndshandikappade

Pris: 23:00 kr inkl moms

12/1976 Utrustningsenheter för handikappade i bostaden. Ersätter nr 7/1975

Pris: 11:00 kr inkl moms

13/1976 Hjälpmedel tillverkade hos landstingen. Resultat från en inventering

Pris: 13:00 kr inkl moms

1/1977 Gravt synskadades möjligheter till registrering, arkivering och sökning av information

Pris: 14:75 kr inkl moms

2/1977 Rapport från en studieresa till USA och Canada 5 - 30 maj 1976

Pris: 13:25 kr inkl moms

3/1977 **Förstudier och utvecklingsarbete kring kassettbandspelare för förståndshandikappade**

Pris: 9:25 kr inkl moms.

4/1977 The Swedish Institute for the Handicapped - A survey

Pris: 6:- kr inkl moms.

5/1977 Rehabilitation in Sweden

Pris: 6:50 kr inkl moms

6/1977 Expansion of Braille Production in Sweden

Pris: 21:50 kr inkl moms

Pris: 10:50 kronor inkl moms
300.K1.77. Pogo Print, Stockholm